

Project Managers do IT better?

(Ken Thomas, Lecturer - School of Engineering, WIT, Waterford – kthomas@wit.ie)

Introduction

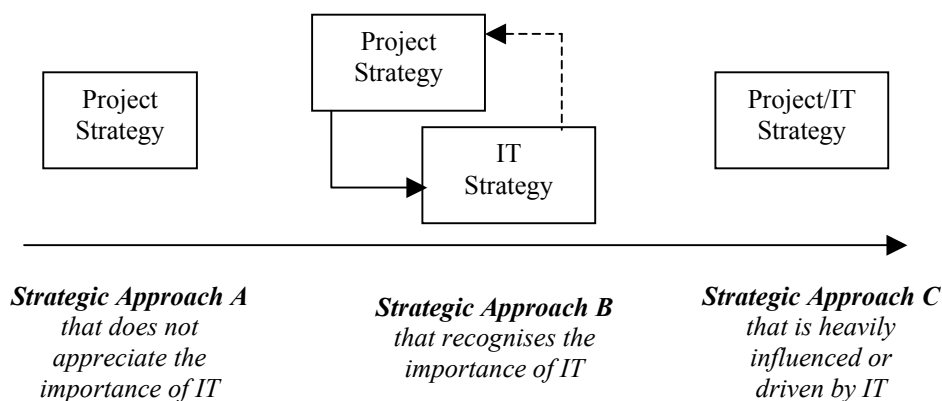
Probably the single biggest agent of change in business processes over the past fifteen years has been the introduction, use and development of Information Technology (IT). This is also likely to be true for the construction industry, but many observers suggest that our industry has not introduced, used or developed IT to anything like the extent to which it could or should.

It is worth considering how individual Project Managers, and firms that act in a Project Management capacity, can encourage the exploitation of IT on their construction projects. The benefits of doing so may not just accrue to the client (e.g. improved quality/performance, lower total costs, faster completion times) and the general economy; there are also potential benefits (e.g. increased profits, less stress, greater job satisfaction) for all participants in the construction project process, including the Project Manager.

Strategy and IT

Although the total number of firms involved in the industry is relatively large, the existing and potential influence of the relatively small number of individuals and firms that act as Project Managers is very significant. If Project Managers can visualise how IT can be exploited on his/her project and develop an appropriate strategy to realise that vision, then he/she can insist on (or certainly encourage) project participants to follow. Of the three strategic approaches outlined in the diagram below, I propose that the Project Manager should employ B or C.

Strategic approach of Project Managers and the perceived importance of IT



Although it is recognised that to develop an appropriate strategy is a difficult task, the potential benefits are so significant that the Project Manager should do so. Among the basic rules and issues to be addressed by the strategy are the following:

- identify the client's specific IT requirements for the project;
- never key in the same information twice;
- replace paper based information with digital information where possible;

- consider the creation of a project Intranet to allow for fast and secure sharing/communication of information between project participants;
- consider insisting on all participants using certain specified 'common' software and/or identify how the various software packages to be used can exchange data/information with one another;
- do not get carried away with the technology and/or forget about the people who you want to work on your project.

The last point is very important as the availability of the latest IT to project participants does not necessarily imply that they are going to use it, or perhaps use it with the same level of expertise and enthusiasm. IT will also make working as a team easier, but it will still be up to humans to decide if and how they want to work together.

1998 Survey

In April/May 1998 I carried out a wide ranging study of IT use in the Irish construction industry by the leading architectural, consulting engineering, quantity surveying and contracting firms (top 50 in each sub-sector). The frequency of these firms acting as Project Managers will obviously vary depending on the chosen procurement route, but the majority had taken on the role at one stage or another. The most senior person with responsibility for IT completed the questionnaire on behalf of their firm. In some firms this person was known as the IT Manager, but in the majority of cases he/she had other responsibilities apart from IT. The overall response rate was 71%.

Among the various commercially available software packages identified in the survey, (for design, project planning, estimating, finance, general administration/business and operating systems), the most popular are indicated in the chart below.

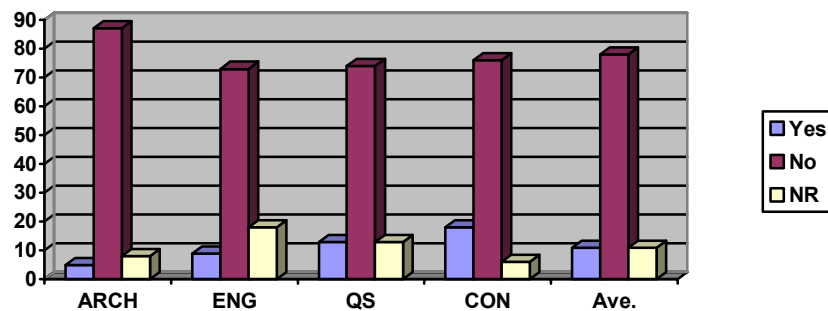
Most popular software identified in survey

Software	ARCH%	ENG%	QS%	CON%	Ave. %
AutoCAD	62	100	18	52	58
MS-Project	41	49	29	49	41
MS-Office	92	91	76	94	88
MS-Windows 95	62	91	90	85	82

Although other project planning packages such as PowerProject and Primavera are being used by a number of Project Managers, MS-Project is used to a much greater extent. Whether this means that MS-Project is the best package available in this category is debatable; the dominance of MS-Windows and MS-Office is undoubtedly a significant influence.

Before considering a number of what I regarded as encouraging and disappointing results from the survey, it is interesting to note the response to the question regarding IT and human participation in Project Management over the next five years.

Q: Do you think that the use of IT in the construction industry over the next five years will lead to a decrease in human input/participation in Project Management?



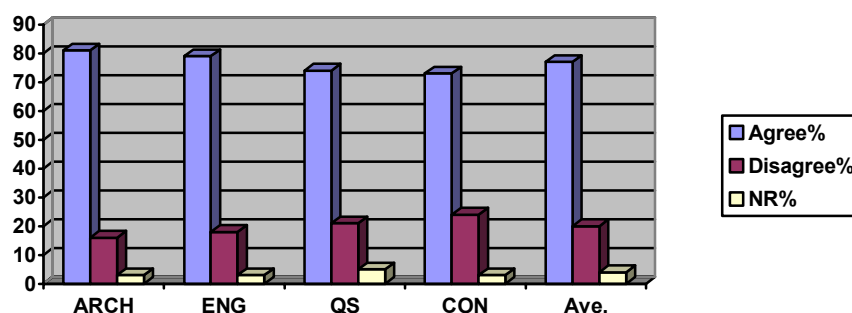
These results indicate a strong belief across all four sub-sectors that Project Management will continue to require a significant amount of human activity in the future.

Encouraging Results from Survey

There were a number of encouraging results which showed that (in general) the firms were using IT extensively, and their use of IT is likely to continue and increase in the future. All four sub-sectors were using Internet facilities and presumably the extent of this use has increased even further. In relation to the influence of clients on participants in the Irish construction industry there was strong agreement (87% Average) that clients will insist on specific IT facilities within the next five years. There was also general agreement (68% Average) that IT will have a major influence on the Irish construction industry over this period. These latter two sets of results would indicate that the firms were generally aware of both the importance and potential of IT.

One of the most important aspects of IT is its potential to improve integration within the industry. Many of the more recent reports and reviews around the world, including the 1997 'Strategic Review of the (Irish) construction industry', stress the importance of teamwork. It was therefore encouraging to note that the vast majority of respondents agreed that IT will improve the integration of the work of participants in the construction sector over the coming years.

Q: Do you agree that IT will improve the integration of the work of participants in the construction sector over the next five years ?

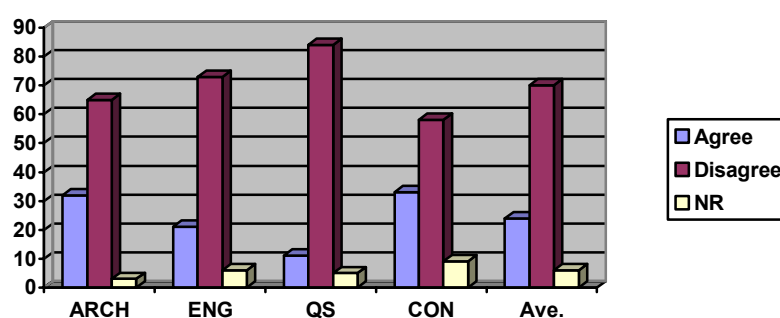


Disappointing Results from Survey

Although there were many encouraging results, there were also a number that could be regarded as disappointing. On the basis of the premise that exploitation of IT requires a strategic approach, it was a cause for concern that an average of only 41% had an IT strategy. Also, over half of those who did not have an IT strategy had no short-term plans to develop and adopt such a strategy.

There was an interesting result to the question regarding the use of IT by clients to obtain more cost-effective services outside Ireland over the next five years.

Q: Do you agree that clients will use IT over the next five years to obtain more cost effective services outside Ireland?



Although it is true that many clients for construction work in this country will want to work with Irish firms in the future for a variety of reasons (e.g. personal relationships), it appears to be a bit naïve to discount the potential of IT enabling clients to consider non-Irish options. IT has the potential to increase competition. As the technology improves, costs decrease and standards converge, it is likely that at least some clients will consider firms based in the UK, mainland Europe, the US and beyond.

The Future

The potential impact of IT on the Irish construction industry is enormous. If IT is going to reduce or eliminate much of the human input into the industry, (particularly the straightforward, repetitive activities), all participants need to radically rethink their activities for the future. The likelihood of significantly increased competition due to IT also needs to be taken into account.

Whatever about the long-term future for the Irish construction industry, planning for the next five years is an easier (but not simple) task. I believe that there are benefits for the national economy, construction clients, Project Managers and the industry as a whole if we exploit IT. In order to make rapid progress, Project Managers must take the lead. If they do so in the short-term, then they are likely to bring a relatively large number of other firms with them. If they do not, then they run the risk of not being the Project Managers in the future and the industry in general will take longer to reap the benefits of IT.